

IN THE CLAIMS:

1. (Original) A magneto-optical recording medium adapted to be heated from a room temperature range to a medium temperature range above the room temperature range and to a high temperature range above the medium temperature range, said medium comprising:

a first magnetic layer, which has an in-plane magnetization at the room temperature range, and which changes to a perpendicular magnetization at the medium temperature range;

a second magnetic layer having a perpendicular magnetization; and

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a third magnetic layer, wherein the third magnetic layer is interposed between said first and second magnetic layers, and has a Curie temperature lower than those of said first and second magnetic layers, and has an in-plane magnetization at the room temperature range and changes to a perpendicular magnetization at the medium temperature range.

2. (Original) A method of reproducing, with a laser beam, information recorded on a magneto-optical recording medium comprising a first magnetic layer, a second magnetic layer having a perpendicular magnetization, and an intermediate layer therebetween having a Curie temperature higher than a room temperature range, lower than the Curie temperature of the first and second magnetic layers, and in a high temperature range, the first magnetic layer having an in-plane magnetization at the room temperature range, changing to a perpendicular magnetization at a medium temperature range higher than the room temperature range and changing back to an in-plane magnetization at or above the Curie temperature of the intermediate layer in the high temperature range higher than the medium temperature range, said method comprising the steps of:

projecting a laser beam onto the magneto-optical recording medium from a side of the first magnetic layer;

heating the first magnetic layer with the laser beam so that the first magnetic layer has a portion in the room temperature range having in-plane magnetization and a portion in the medium temperature range having a perpendicular magnetization;

heating a portion of the intermediate layer at least to its Curie temperature so that a corresponding portion of the first magnetic layer in the high temperature range changes to an in-plane magnetization;

transferring information recorded in the second magnetic layer to the first magnetic layer by exchange coupling through the intermediate layer perpendicular magnetization of the first magnetic layer and magnetization of the second magnetic layer; and

reproducing the recorded information based on the magneto-optic effect of the light reflected from the magneto-optical recording medium.

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8. (New) The magneto-optical recording medium of claim 1, wherein the first magnetic layer and the third magnetic layer are magnetically coupled by exchange coupling.